Please REPLACE the paragraph beginning at page 3, line 27, as follows:

B2

Furthermore, in some of the conventional transmission systems, erroneous bits included in the transmission data cannot be corrected when parity bits are contained in the data. One solution for improving a capability of correcting the erroneous bits in the data is to increase the number of the error correction bits added to the transmission data. However, this solution may be not practical, because a considerably high transmission rate is required for increasing the number of error correcting redundant bits to be added to the transmission data.

Please REPLACE the paragraph beginning at page 4, line 1, as follows:

B3

Another possible solution is to insert the error correction bits into reserved bits within the SOH. The reserved bits means that those bits are reserved for a variety of future applications. In this case, since a lot of redundant bits are to be inserted into some particular locations in the SOH, a problem may occur that a size of a circuit comprising a transmission device, such as the transmitter 201 and the receiver 202, is enlarged. This solution has a further drawback in that the error correction bits, which have been already assigned to the reserved bits, cannot be made use of, if the reserved bits are decided to be used for one of the future applications.

Please REPLACE the paragraph beginning at page 10, line 2, as follows:

B4

The transmitting-end station 1 further includes the phase alignment unit 6 that is connected to the encoder 5 and which together performs a data generating function. The encoder 5 provides a signal of all n bits comprising the k data from the channels and the generated (n-k) error correction bits to the phase alignment unit 6. The phase alignment unit 6 compensates for a delay due to the error correction coding so as to phase all the n bits. The phase alignment unit 6 may be, for example, a delay circuit capable of aligning a delay time appropriately. The signals comprising the n bits in phase are then passed to the electrical-optical converter 7, which is also included in the transmitting-end station 1. The electrical-optical converter 7 converts the electrical signals of the n bit into optical signals having wavelengths λ_1 to λ_n, respectively.

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Please REPLACE the paragraph beginning at page 11, line 20, as follows:

B5

The electrical signals received by the decoder 13 are formed by k bits, each corresponding to one of the channels CH_1 to CH_k, and (n-k) error correction bits. Then the decoder 13 performs a data regenerating function, which includes error correction decoding by means of the k bits representing the data from the channels CH_1 to CH_k and the (n-k) error correction bits and sends the decoded signals to the SOH termination unit 14, which is also included in the receiving-end station 2. The SOH termination unit 14 terminates the SOHs and delivers the signals with the SOHs to a succeeding device (not shown in Fig. 2) as data representing the data coming from the channels CH_1 to CH_k.

Please REPLACE the paragraph beginning at page 14, line 12, as follows:

B6

A second embodiment of an optical transmission system according to the present invention is shown in Fig. 5. As shown in Fig. 5, the optical transmission system comprises a transmitting-end station 21, a receiving-end station 22, an optical transmission line connecting the transmitting-end station 21 and the receiving-end station 22. The transmitting-end station 21 includes an SOH inserting unit 24, a parity generator 25, a phase alignment unit 26, an electrical-optical converter (OS) 27 and a wavelength-multiplexing unit 28. The receiving-end station 22 includes a wavelength-demultiplexing unit 31, an optical-electrical converter (OR) 32, a parity detector 33, an SOH terminating unit 34 and an error correction unit. In Fig. 5, the encoding unit and its function, as in Fig. 2, are incorporated in the parity generator 25 and the decoding unit and its function, as in Fig. 2, are incorporated in the parity detector 33.

Please REPLACE the paragraph spanning pages 14-15, as follows:

B7

At the transmitting-end station 24, the SOH inserting unit 24 adds an individual SOH (Section Over Head) to each transmission data coming from k channels CH_1 to CH_k and supplies the k transmission data with the individual SOH to the parity generator 25. The parity generator 25 calculates a parity bit for the supplied k transmission data and outputs the calculated parity bit together with the k transmission data, and thus, passing (k+1) data to the phase alignment unit 26. The phase alignment unit 26 compensates for a delay caused by the parity generator 25 and sends resulting in-phase (k+1) data to the electrical-optical converter 27. The electrical-optical converter 27 converts the in-phase (k+1) data to (k+1) optical signals

4 26

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having different wavelengths λ_1 to λ_{k+1} and passes the optical signals to the wavelength-multiplexing unit 28. The wavelength-multiplexing unit 28 multiplexes the (k+1) optical signals and sends the multiplexed signals to the optical transmission line 23. In this case, the parity bit calculated for the k transmission data on the channels CH_1 to CH_k corresponds to the vertical parity.

Please REPLACE the paragraph spanning pages 19-20, as follows:

B8

The transmitting-end station 41 includes a frame generating and SOH inserting unit 44, an encoder 45, an electrical-optical converter (OS) 46 and a wavelength-multiplexing unit 47. The receiving-end station 42 includes a wavelength-demultiplexing unit 51, an optical-electrical converter (OR) 52, a memory unit 53, a decoder 54, an SOH terminating unit 55 and a top-of-frame ("TOF") detector 56.

Please REPLACE the paragraph beginning at page 32, line 17, as follows:

B9

The transmitting-end station 111 includes an encoder 114, an identification ("ID") signal-inserting unit 115, a multiplexing unit 116 and an electrical-optical converter (OS) 117. The receiving-end station 112, includes an optical-electrical converter (OR) 118, a separator 119, an identification ("ID") signal detector 120 and a decoder 121.

IN THE CLAIMS:

Please REPLACE claims, in accordance with the following:

Sub C17

B10

1. (AS TWICE AMENDED HEREIN) An optical transmission system, comprising a transmitting-end optical transmission device, a receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices,

the transmitting-end optical transmission device comprising:

encoding means, having n outputs, for forming k data by aligning phases of data on k channels with each other and for generating (n-k) error correction bits for said k data and adding said (n-k) error correction bits to said k data, said (n-k) error correction bits being in parallel with said k data, and

wavelength-multiplexing means, connected to the encoding means, for

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B2

converting both said k data and said (n-k) error correction bits to n optical signals having different wavelengths and for wavelength-multiplexing said n optical signals so as to be delivered to the optical transmission line; and

the receiving-end optical transmission device comprising:

wavelength-demultiplexing means for separating the wavelength-multiplexed optical signals from the optical transmission line into n optical signals, each corresponding to one of the different wavelengths, and

decoding means connected to the wavelength-demultiplexing means, for generating k error corrected data by correcting error bits using the (n-k) error correction bits contained in said n separated optical signals.

2. (AS ONCE AMENDED HEREIN) An optical transmission system comprising a transmitting-end optical transmission device, a receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices,

the transmitting-end optical transmission device comprising:

B1 con't

parity generating means for forming k data by adding an SOH (Section Over Head) including at least one error monitoring byte to data on k channels and aligning phases of said data with each other and for generating a parity bit for said k data and adding said parity bit to said k data; and

wavelength-multiplexing means connected to the parity generating means, for converting said k data and said parity bit to (k+1) optical signals having different wavelengths and for wavelength-multiplexing said (k+1) optical signals so as to be delivered to the optical transmission line, and

the receiving-end optical transmission device comprising:

wavelength-demultiplexing means for separating the wavelength-multiplexed optical signals from the optical transmission line into (k+1) optical signals, each corresponding to one of the different wavelengths; and

error correction means connected to the wavelength-demultiplexing means, for correcting error bits based on one result of a parity check for said separated (k+1) optical signals and the other result of a parity check using said at least one error monitoring byte.

3. (AS ONCE AMENDED HEREIN) An optical transmission system comprising a

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transmitting-end optical transmission device, a receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices,

the transmitting-end optical transmission device comprising:

encoding means having k input and n outputs, for generating (n-k) error correction bits for every transmission data having k bits; and

B11 concl.

wavelength-multiplexing means connected to the encoding means, for converting said transmission data and said (n-k) error correction bits to n optical signals having different wavelengths and for wavelength-multiplexing said n optical signals so as to be delivered to the optical transmission line, and

the receiving-end optical transmission device comprising:

wavelength-demultiplexing means for separating the wavelength-multiplexed optical signals from the optical transmission line into n optical signals, each corresponding to one of the different wavelengths; and

decoding means connected to the wavelength-demultiplexing means, for correcting error bits of data having k bits contained in said n separated optical signals by using said (n-k) error correction bits contained in said n separated optical signals.

Sub C17

21. (AS ONCE AMENDED HEREIN) An optical transmission system comprising a transmitting-end optical transmission device, a receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices,

the transmitting-end optical transmission device comprising:

data generating means for aligning phases of a first predetermined number of data on a corresponding number of channels and for adding a second predetermined number of error correction bits to said first predetermined number of data, said second predetermined number of error correction bits being in parallel with said first predetermined number of data, and

B12

wavelength-multiplexing means, connected to the data generating means, for converting each of said first predetermined number of data and said second predetermined number of error correction bits to respective optical signals having different wavelengths and for wavelength-multiplexing said optical signals so as to be

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delivered to the optical transmission line; and

the receiving-end optical transmission device comprising:

wavelength-demultiplexing means for separating the wavelength-multiplexed optical signals from the optical transmission line into further optical signals, each corresponding to one of the different wavelengths, and

data regenerating means, connected to the wavelength-demultiplexing means, for regenerating said first predetermined number of error corrected data by correcting error bits of a third number of further data, the third number being equal to the first number, contained in said further optical signals using said second number of error correction bits contained in said further optical signals.

22. (AS ONCE AMENDED HEREIN) A transmitting-end optical transmission device in an optical transmission system comprising the transmitting-end optical transmission device, a receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices, comprising:

B12 Con't

data generating means for aligning phases of a first predetermined number of data on a corresponding number of channels and for adding a second predetermined number of error correction bits to said first predetermined number of data, said second predetermined number of error correction bits being in parallel with said first predetermined number of data; and

wavelength-multiplexing means, connected to the data generating means, for converting each of said first predetermined number of data and said second predetermined number of error correction bits to respective optical signals having different wavelengths and for wavelength-multiplexing said optical signals so as to be delivered to the optical transmission line.

23. (AS ONCE AMENDED HEREIN) A receiving-end optical transmission device in an optical transmission system comprising a transmitting-end optical transmission device, the receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices, comprising:

wavelength-demultiplexing means for separating the wavelength-multiplexed optical

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signals from the optical transmission line into further optical signals, each corresponding to one of the different wavelengths; and

data regenerating means, connected to the wavelength-demultiplexing means, for regenerating said first predetermined number of error corrected data by correcting error bits of a third number of further data, the third number being equal to the first number, contained in said further optical signals using said second number of error correction bits contained in said further optical signals.

24. (AS ONCE AMENDED HEREIN) An optical transmission system comprising a transmitting-end optical transmission device, a receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices,

the transmitting-end optical transmission device comprising:

a data generator aligning phases of a first predetermined number of data on a corresponding number of channels and adding a second predetermined number of error correction bits to said first predetermined number of data, said second predetermined number of error correction bits being in parallel with said first predetermined number of data, and

B12 con't

a wavelength-multiplexor, connected to the data generator, converting each of said first predetermined number of data and said second predetermined number of error correction bits to respective optical signals having different wavelengths and wavelength-multiplexing said optical signals so as to be delivered to the optical transmission line; and

the receiving-end optical transmission device comprising:

a wavelength-demultiplexor separating the wavelength-multiplexed optical signals from the optical transmission line into further optical signals, each corresponding to one of the different wavelengths, and

a data regenerator, connected to the wavelength-demultiplexer, regenerating said first predetermined number of, error corrected data, derived from a third number of further data contained in said further optical signals using said second predetermined number of error correction bits contained in said further optical signals, the third number

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being equal to the first number.

25. (AS ONCE AMENDED HEREIN) A transmitting-end optical transmission device in an optical transmission system comprising the transmitting-end optical transmission device, a receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices, comprising:

a data generator aligning phases of a first predetermined number of data on a corresponding number of channels and adding a second predetermined number of error correction bits to said first predetermined number of data, said second predetermined number of error correction bits being in parallel with said first predetermined number of data; and

a wavelength-multiplexor, connected to the data generator, converting each of said first predetermined number of data and said second predetermined number of error correction bits to respective optical signals having different wavelengths and wavelength-multiplexing said optical signals so as to be delivered to the optical transmission line.

B12 cont.

26. (AS ONCE AMENDED HEREIN) A receiving-end optical transmission device in an optical transmission system comprising a transmitting-end optical transmission device, the receiving-end optical transmission device and an optical transmission line connecting the transmitting-end and receiving-end optical transmission devices, comprising:

a wavelength-demultiplexor separating the wavelength-multiplexed optical signals from the optical transmission line into further optical signals, each corresponding to one of the different wavelengths; and

a data regenerator, connected to the wavelength-demultiplexer, regenerating said first predetermined number of error-corrected data, derived from a third number of further data contained in said further optical signals using said second predetermined number of error correction bits contained in said further optical signals, the third number being equal to the first number.

Sub C17

B13

28. (AS ONCE AMENDED HEREIN) An optical transmission system as recited in claim 27, wherein the transmission-end device comprises: